

GOVERDOVSKAYA, A.Ya., dotsent

Protection of children's health in Kazakhstan. Zdrav. Kazakh. 21
no. 3:3-6 '61. (MIRA 14:4)

1. Glavnyy pediater Ministerstva zdravookhraneniya Kazakhskoy SSR.
(KAZAKHSTAN—CHILDREN—CARE AND HYGIENE)

GOVERDOVSKAYA, A.Ya.; BAYMURATOVA, G.G.; KOTLYARSKAYA, A.Z.

Course of pneumonia in children under one year of age. Zdrav.
Kazakh. 22 no.3:39-42 '62. (MIRA 15:12)

1. Iz kafedry detskikh bolezney fakul'teta usovershenstvovaniya
vrachey (zav. - dotsent A.Ya.Goverdovskaya) Kazakhskogo
meditsinskogo instituta.

(PNEUMONIA)

MAKSIMOV, V. I., and GOVERDOVSKAYA, K. T., Veterinarians

"On peroral application of novoplasmin (LP₁) in piroplasmosis and
nuttalliosis of horses."

SO: Vet. 24(3), 1947, p 41

LOZOVSKAYA, E.V.; GOVERDOVSKAYA, T.P.

Investigating optimum parameters for the three-mirror astronomical
objective. Sbor.st.LITMO no.47:98-103 '59. (MIRA 16:10)

GAZARYAN, G.N.; GOVERDOVSKIY, Ye.A.

Prospects for finding oil and gas in the Gissar Valley of the
Tajik Depression on the basis of geological and geochemical data.
Neftegaz. geol. i geofiz. no.4:8-11 '64. (MIRA 17:6)

1. Kompleksnaya laboratoriya Vsesoyuznogo neftyanogo nauchno-
issledovatel'skogo geologorazvedochnogo instituta.

GOVERMAN, L. A.

Tires, Rubber

Effect of air pressure in pneumatic tires and of centers of gravity on automobile economy. Dokl. Ak. sel'khoz. 17 no.1, 1952.

Monthly List of Russian Accessions, Library of Congress, June 1952. UNCLASSIFIED.

GOVERN, J.N. Mo., dr.

Utilization of poplar, birch, beech, and oak wood for pulp
and paper manufacturing. Cel hirtle 11 no.4:126-133 Ap '62.

1. Parsons & Whittemore, Inc.

AUTHOR: Govert, A.A., Engineer SOV/91-59-1-11/26

TITLE: Requirements Concerning the Quality of the Feed and Boiler Water of Stationary Locomobiles (Trebovaniya k kachestvu pitatel'noy i kotlovoy vody statsionarnykh lokomobiley)

PERIODICAL: Energetik, 1959, Nr 1, pp 20 - 24 (USSR)

ABSTRACT: The author gives instructions and formulas needed for the correct calculation of the water-purification and blow-thru operations in different types of stationary locomobiles (up to 2 t/h). A table gives the answer to the question of which degree of water hardness requires water purification. Authorities being at dispute concerning several points of this field, the author pleads that the views of I.F. Shapkin are the best. The problems answered are as follows: Degree of hardness which requires purification; frequency of the blow-thru operations; norms concerning the correct choice of outside- or inside boiler water purification;

Card 1/2

SOV/91-59-1-11/26

Requirements Concerning the Quality of the Feed and Boiler Water of Stationary Locomotives

limit quantities of alkalis and dry remnants; calculation of the sludge contents in the blow-thru water; control-concentration as well as actual percentage of chlorides in the boiler water; blow-thru operations and their dependence on the quality of water hardness; the limit of total hardness of water. There are 4 tables, 1 diagram and 1 Soviet reference.

Card 2/2

GOVERT, Aleksandr Aleksandrovich; IPATOV, I.V., red.; VORONIN, K.P.,
tekhn. red.

[Water treatment for steam engines] Vodopodgotovka dlia loko-
mobilei. Moskva, Gos.energ. izd-vo, 1960. 188 p.

(MIRA 14:5)

(Steam engines)

(Feed-water purification)

IL'INA, N.P., kandidat tekhnicheskikh nauk; IVANOVA, A.V.; GOVERT, A.A.;
BASHKIROV, L.G., redaktor; KONYASHINA, A. tekhnicheskii redaktor.

[Corrosion of steel roofs and its control] Korrozii stal'nykh
krovel' i bor'ba s nei. Moskva, Izd-vo Ministerstva kommunal'nogo
khoziaistva RSFSR, 1955. 69 p. (MIRA 9:6)
(Steel--Corrosion) (Roofing, Iron and steel)

GOVERT, A. A.

IL'INA, N.P.; GOVERT, A.A.; IVANOVA, A.V.

Controlling corrosion of steel roofs. Gor. khez. Mosk. 31 no.2:35
F '57. (MIRA 10:4)
(Painting, Industrial) (Roofs) (Corrosion and anticorrosives)

GOVERT, A.A., inzh.

Conditioning of water for condensers in refrigerating plants.
Khol.tekh. 38 no.2:60-62 Mr-Ap '61. (MIRA 14:3)
(Refrigeration and refrigerating machinery)

GOVINDARYAN, S. V.										PROCESSES AND PROPERTIES INDEX										100 AND 4TH FLOOR									
BC																				A.3-28									
<p>Permeability study of non-protein nitrogen of manure. J. G. Govindarajan and M. Srivastava (<i>Curr. Sci.</i>, 1950, 19, 234).</p> <p>The content of nitro-gen-positive substances in road-free guano of 4 named varieties of manures is given, as determined by partition chromatography on silica paper. Fractions are present and the amino-acids produced on hydrolysis are identified for each variety.</p> <p>E. M. MATTHEWBURY,</p>																													
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<div style="font-size: 2em; font-weight: bold;">BC</div>					<div style="font-size: 1.5em; font-weight: bold; float: right;">A-3-27</div> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p>Increased yields of Rice through zinc and fertilization. H. G. Gopala Rao and S. Venkateswaraiah (Chem. Sci., 1950, 19, 608).</p> <p>Experiments in Mysore indicate that 5 lb. of $ZnSO_4$ per acre increases the total crop by about 15%, and individual yields of dry grain and straw are increased in each case by 15%.</p> <p style="text-align: right;">E. M. RATTENBURY.</p> </div>														
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<div style="position: relative;"> <div style="position: absolute; top: 10px; left: 10px; font-size: 2em; font-weight: bold;">Bc</div> <div style="position: absolute; top: 10px; right: 10px; font-size: 2em; font-weight: bold;">B 3</div> <div style="position: absolute; top: 250px; left: 250px; background-color: black; color: white; padding: 5px;"> <p> [redacted] of patchouli to manganese deficiency in soils. S. R. Govindaryan and S. V. Govindarajan. (Curr. Sci., 1960, 31, 280) [redacted] Manganese deficiency symptoms in patchouli (<i>Pogonimon</i> [redacted]) appear to be related to Mn deficiency. Patchouli grown under the same conditions also shows similar deficiency character- istics. In both cases a decrease of the Fe content in the leaves is also observed. The symptoms are cured by the application of aq. [redacted] (2-10 lb. per acre). D. DOLLIMORE. </p> </div> </div>									
<div style="display: flex; justify-content: space-between;"> COMMON ELEMENTS COMMON ELEMENTS </div>									
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GOVINDYAYEVA, A.V.

Evaluation of coprological data in pneumonia in infants. Sovet. med.
17 no.4:32-34 Apr 1953. (GIML 24:4)

1. Of the Clinic for Children's Diseases (Acting Head -- T. M. Bonch-
kovskaya) of the Therapeutic Faculty of Sverdlovsk Medical Institute
(Director -- Prof. A. P. Zverev).

GVOLOTSKIY, D.Ya.; LUBENETS, I.A.; KOLOSOV, M.I.; FAYNSHTEYN, O.Ya.;
MOROZOV, A.N.

Obeskremnivanje martenovskogo chuguna kislородом.

report submitted for the 5th Physical Chemical Conference on
Steel Production.

MOSCOW

30 JUN 1959

S/803/62/000/002/006/006

AUTHORS: Govor, A.I., Rozov, B.S., Stepanov, B.M.

TITLE: Telemetering of time with multiline recording with the tube 18 JO-47 (18LO-47).

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Avtomatika i telemekhanika. no. 2. 1962, 75-84.

TEXT: The paper describes one of the possible methods for the high-speed transmission of information accumulated over a long period of time in the course of a slowly advancing process. The telemetering device for the measurement of time described permits the measurement of time intervals of up to 1 sec with successive transmission of the results of the measurement through a communications channel in the course of a few millisec. Such a transformation of a time interval requires the use of a memory storage. Inasmuch as the read-out time for the information is small, for example, appx. 5 nsec, the memory-storage unit must be sufficiently fast-acting. Such an equipment is found in the ordinary cathode-ray-tube (CRT) with a nonmetallized screen, such as the 18LO-47 CRT, which, in this instance, operates as a memory storage. The 18LO47 CRT is employed because it has a nonmetallized screen and 2 rays, one of which can be used for recording and the other for read-out

Card 1/2

Telemetering of time with multiline

S/803/62/000/002/006/006

and preparation of the screen for recording. During the recording period, the screen is exposed to a high negative potential, while the preceding recording is erased. By means of an unfocused beam of electrons with a negative potential on the collector of the order of 300-400 v. The screen thus becomes charged to within a few volt to the potential of the collector. During recording and read-out the collector is at a zero potential, that is, there is an accelerating field between the screen and the collector. This preparation of the screen, which permits a considerable acceleration in the rate of recording and read-out, was first proposed and reduced to practice by Yu. B. Dvoyeglazov. The raster-type recording and read-out of large intervals of time is described, also the telemetering of time, which comprises a description of the recording equipment, the read-out and the playback equipment, and the amplification and shaping of the signal read. Experimental data are described and 11 oscillograms are adduced. The results of the experimentation justify the following conclusions: (1) The number of lines of recording can be enlarged to 85 to 90; the greatest reduced error in the breadboard model described was 0.1% and may be reduced to 0.05% if the number of lines is doubled; (2) the number of scanning lines should be selected in the range of 100 to 150; tuning of such a system is greatly simplified as compared to one with a scanning of 256 lines; (3) the focusing of the recording and read-out ray should be improved; (4) edge signals should be eliminated. There are 11 figures and 1 reference which appears to be a foreign original in Russian translation.

Card 2/2

24.5500

37813
S/120/62/000/002/045/047
E039/E435

AUTHORS: Mikhaylov, N.N., Govor, A.Ya.

TITLE: A resistance thermometer of lead brass for the measurement of low temperatures

PERIODICAL: Pribery i tekhnika eksperimenta, no.2, 1962, 180-182

TEXT: The early work on the temperature sensitivity of various bronzes for use as low temperature resistance thermometers is reviewed. In this paper the temperature sensitivity of two alloys is determined: No.1 alloy (62% Cu, 36% Zn, 1.73% Pb, 0.08% Ni) and NC-59-1 (LS-59-1) (59% Cu, 39.7% Zn, 1.3% Pb and small admixtures of Fe, Bi and Sb). The samples were in the form of wire 10 cm long and diameters 0.1, 0.07 and 0.05 mm wound into helices 3 mm diameter and 20 mm long and mounted without strain in a cryostat. In the case of alloy No.1, the working range for wire of 0.1 mm diameter lies between 4.5 and 5.5°K; for 0.07 mm diameter between 3.25 and 4.7°K and for 0.05 mm diameter between 2 and 4.2°K. The working ranges for the second alloy LS-59-1 are for 0.1 mm diameter 4.1 to 5.5°K; for 0.07 mm diameter 2.7 to 4.6°K and for 0.05 mm diameter 1.5 to 3.8°K.

Card 1/2

L 20885-66 EWT(d)

ACC NR: AP6002517

SOURCE CODE: UR/0286/65/000/023/0024/0024

AUTHORS: Byr'ka, V. F.; Ibikus, U. Yu.; Govor, G. A.

ORG: none

TITLE: A push-pull pulse length modulator, Class 21, No. 176606 [announced by Karaganda Scientific-Research Institute of Coal (Karagandichskiy nauchno-issledovatel'skiy ugol'nyy institut)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 23, 1965, 24

TOPIC TAGS: pulse modulation, pulse width modulation, linear function

ABSTRACT: This Author Certificate presents a two-cycle pulse width modulator. The modulator contains two identical arms. Each arm has a semiconductor triode with a grounded emitter. The primary winding of a transformer is connected to the collector circuit of the triodes (see Fig. 1). The transformer has a core with a rectangular hysteresis loop. One terminus of the secondary winding of the transformer is connected to ground and the other to one end of the load which is common to both arms. The other end of the load is connected to ground. The design provides linearity of the modulation characteristic. The load is connected

Card 1/2

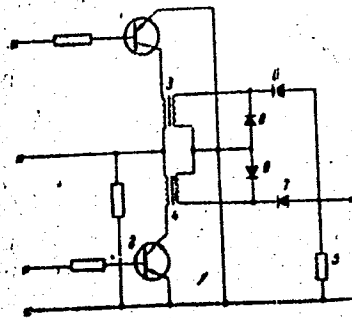
UDC: 621.376.5

L 20885-66

ACC NR: AP6002517

to the secondary winding through semiconductor diodes, and the anodes of the diodes are connected with the load. Semiconductor stabilitrons are connected in parallel with the secondary windings, and the anodes of the stabilitrons are grounded.

Fig. 1. 1 and 2 - Semiconductor triodes;
3 and 4 - transformers; 5 - load;
6 and 7 - semiconductor diodes;
8 and 9 - semiconductor stabilitrons.



Orig. art. has: 1 figure.

SUB CODE: 09/ SUBM DATE: 15Jul64

Card 2/2 ULR

GOVOR, N.

Remarks on certain statistical errors. Zdrav. Bel. 7 no.6:72 Je '61.
(MIRA 15:2)

(MEDICAL STATISTICS)

EXCERPTA MEDICA Sec.17 Vol.4/1 Public Health, etc. Jan58
~~GOVERNMENT~~

68. GOVOR N. I. *Studies of morbidity statistics among the population in polyclinics (Russian text)* Zdrav. Belorussii 1956, 9 (52—53)
Studies performed in polyclinics concerning the statistics of illness among the population make it possible to trace changes in the health of the population and to take measures for improving prophylactic and therapeutic services; such studies should be carried out along standardized lines and the author suggests a scheme for the analysis of such data.

GOVOR, N.I.

Incidence of some abdominal diseases in White Russia. Zdrav. Belor.
6 no.8:60-62 Ag '60. (MIRA 13:9)
(WHITE RUSSIA--ABDOMEN--DISEASES)

GOVOR, N.I. (Minsk)

Incidence of major diseases of the abdominal cavity in White Russia.
Sov.zdrav. 20 no.1:29-32 '61. (MIRA 14:5)
(WHITE RUSSIA--ABDOMEN--DISEASES)

GOVOR, N.I.; LIPEN', A.A.

Diseases of the cardiovascular system in the White Russian S.S.R.
Zdrav. Bel. 7 no.8:17-21 Ag '61. (MIRA 15:2)

1. Iz otdela meditsinskoy statistiki Ministerstva zdravookhraneniya
BSSR.

(WHITE RUSSIA CARDIOVASCULAR SYSTEM DISEASES)

GOVOR, N.N.

Morbidity of the population of Minsk in 1955 and 1956. Sov.zdrav.
17 no.7:23-29 J1 '58 (MIRA 11:8)

1. Nachal'nik Otdela meditsinskoy statistiki Ministerstva
zdravookhraneniya BSSR.
(VITAL STATISTICS
morbidity in Russia (Rus))

GOVOR, N. O.

AID P - 3650

Subject : USSR/Medicine

Card 1/1 Pub. 37 - 14/18

Author : Govor, N. O.

Title : More about the methods of studying the general sick rate of the population (On Prof. A. M. Merkov's article: "Methods of Studying the General Sick Rate of the Population")

Periodical : Gig. i. san., 10, 52-53, 0 1955

Abstract : A critical review of Prof. Merkov's article, this journal, No. 3, 1955 (See AID P - 2138) and the author's suggestions for improving the methods of public health statistics.

Institution : Division of Medical Statistics, Ministry of Public Health, Belorussian SSR.

Submitted : My 20, 1955

137-58-6-13410

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 324 (USSR)

AUTHORS: Kurmanov, M. I. , ~~Govor, U. S.~~ , Dobruskina, Sh. R. , Sandler, N. I. ,
Solov'yeva, G. G. , Filippova, T. F.

TITLE: The Effect of Arsenic on Properties of High-strength Steels
12KhN3A, 30KhN3A, and 18KhN3A (Vliyaniye mysh'yaka na
svoystva vysokoprochnykh staley 12KhN3A. , 30KhN3A i
18KhN3A)

PERIODICAL: Byul. nauchno-tekhn. inform. Ukr. n. -i. in-t metallov,
1957, Nr 3, pp 59-75

ABSTRACT: Investigations were performed in order to study the effect of
As, in amounts up to 0.3%, on the mechanical properties and
the macro-and micro structure of steels 12KhN3A, 30KhN3A,
and 18KhN3A, as well as on the composition of their carbide
phases, their temper brittleness, cementation, nitriding,
isothermal decomposition, etc. It was established that As
produces a banded structure which cannot be eliminated by
standard heat-treatment procedures, and that it increases
the amount of Ni present in the carbide phase; As has vir-
tually no effect on the mechanical properties of steel, but

Card 1/2

137-58-6-13410

The Effect of Arsenic on Properties of High-strength Steels (cont.)

increases its tendencies toward reversible and irreversible temper brittleness, favors the decomposition of austenite, and inhibits the process of cementation. Nitriding of As steel produces a friable layer of ϵ phase and the hardness is sharply reduced. It is concluded that As impairs the properties of the steels investigated and, therefore, may only be employed in quantities not exceeding a few hundredths of one percent. Bibliography: 7 references.

P. V.

1. Steels--Properties
2. Arsenic--Metallurgical effects
3. Steels--Test results

Card 2/2

VORONTSOV, N.M.; GUNIN, I.V.; NIKOLAYENKO, N.A.; SHNEYEROV, B. Ya., kand.
tekh. nauk; GOVOR, U.S.

Rolls for rolling lightweight channels. Sbor. trud. UNIM
no.9:196-216 '64 (MIRA 18:1)

GOVOR, U.S.

S/137/62/000/002/117/1
A050/A101

AUTHORS: Orlov, A. V., Sandler, N. I., Kukol', V. V., ~~Aleksandrova, N. P.~~
Govor, U. S.

TITLE: Investigation of the borated layer of medium-carbon steel

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 2, 1962, 105, abstract 21709
("Sb. tr. Ukr. n.-i. in-t metallov", 1961, no. 7, 232 - 244)

TEXT: Using the methods of microscopic and X-ray structure analysis, an analysis was carried out of the structure of borated layer of steel 40 subjected to borating by the method of electrolyzing molten borax at 960°C at a current density of 0.2 ampere/cm² and 5-hour duration. The structure of the borated layer of steel 40 consists of the α -phase, carbide B_4C , borides FeB and Fe_2B , which, as one recedes from the surface, appear in the following order: α -Fe, B_4C , borides. The microhardness has the greatest value at the surface and decreases gradually with approach to the base metal. There are 16 references. ✓

T. Fedorova

[Abstracter's note: Complete translation]

Card 1/1

ZAV'YALOV, Mikhail Aleksandrovich; GOVOR, V.A., red.; KHOT'KOVA, Ye.S.,
red. izd-va; KORNYUSHINA, A.S., tekhn. red.

[Central control system on logging roads; textbook for forestry and
lumbering schools] Dispetcherizatsiia na lesovoznykh dorogakh; poso-
bie dlia lesotekhnicheskikh shkol. Moskva, Goslesbumizdat, 1960.
143 p. (MIRA 14:7)

(Lumber--Transportation)

GOVOR, V.M.

IVANOV, V.A., inzh.; MARKMAN, A.L., doktor tekhn.nauk; GOVOR, V.M., inzh.

Work of seed cleaning sections of cottonseed oil extraction plants.
Masl.-zhir. prom. 23 no.9:4-5 '57. (MIRA 10:12)

1.Sredneaziatskiy filial Vsesoyuznogo nauchno-issledovatel'skogo
instituta zhиров.

(Cottonseed oil)

GOVOR, V.M., inzh.; ISMAILOV, I.M., kand.tekhn.nauk; YARMUKHAMEDOV, U.Z., inzh.;
SOSNOVSKAYA, B.Ya., inzh.; KRIVORUCHKO, V.N., inzh.

Cooling of cottonseed oil cake prior to storage. Masl.-zhir.prom. 29 no.2:
40-41 F '63. (MIRA 16:4)

1. Upravleniye pishchevoy promyshlennosti Soveta narodnogo khozyaystva
Uzbekskoy SSR (for Govor). 2. Sredneaziatskiy filial Vsesoyuznogo
nauchno-issledovatel'skogo instituta zhirov (for Ismailov, Yarmukhamedov,
Sosnovskaya). 3. Yangiyul'skiy maslozhirovoy kombinat (for
Krivoruchko).

(Oil cake--Storage)

GOVORCHUK, R. Yu.

US SR 1

The content of silica in the blood and urine of workers in dust-creating industries. R. Yu. Govorchuk (Ukrain. Inst. Ind. Hyg. and Occupational Diseases). *Bor'ba s Silikozom, Akad. Nauk S.S.S.R., Sbornik Statet 1953*, 309-11. —The presence of SiO_2 up to 10 mg. % in the blood and up to 20 mg. % in the urine is to be regarded as normal. Inhalation of free SiO_2 by the lungs increases its content in the blood and urine. No parallelism was discerned between the stages of progressive lung silicosis and the SiO_2 content of the blood or urine. The erythrocyte sedimentation rate tends to increase as the SiO_2 blood content is increased.

B. S. Levins

B. GOVORCIN

"A Contribution to the Knowledge of Yeasts in "nsilage. p. 259"
(TEHNICKI PREGLED, Vol. 4, 5/6, 1952, Beograd, Yugoslavia)

SO: Monthly List of East European Accessions, L.C., Vol. 2, No. 11,
Nov. 1953, Uncl.

GOVORCIN, B.

"Contribution to the Knowledge of Mine Permeability and Their Practical Use",
P. 107, (TEHNIČKI PRUGLED, Vol. 6, No. 3, 1954, Zagreb, Yugoslavia)

EC: Monthly List of East European Accessions (EMAL), LC, Vol. 4, No. 3,
March 1955, Uncl.

GOVORCIN, B.

"Antibacterial properties of actinomycetes," Tehnicki Pregled, Zagreb, Vol 5,
No 5/6, 1953, p. 213.

SO: Eastern European Accessions List, Vol 3, No 11, Nov 1954, L.C.

Experiments with gradient descent and the gradient method of Hestenes and Wolfe (1968) have shown that the gradient method is more efficient than the gradient method of Hestenes and Wolfe (1968) for minimizing the function $f(x)$ over the set S defined by $x \in S$ and $f(x) \leq 0$. The gradient method of Hestenes and Wolfe (1968) is more efficient than the gradient method of Hestenes and Wolfe (1968) for minimizing the function $f(x)$ over the set S defined by $x \in S$ and $f(x) \leq 0$.

YUGOSLAVIA / Microbiology. Antibiosis and Symbiosis. F
Antibiotics.

Abstr Jour : Ref Zhur - Biologiya, No 5, 1959, No. 19490

Author : Govorcin, B.

Inst : Not given

Title : Obtaining Umbramycin with the Aid of
Streptomyces olivaceus

Orig Pub : Tehn. pregl., 1957, 9, No 5-6, 179-187

Abstract : Umbramycin (I), which suppresses almost all
gram-positive and gram-negative bacilli and
also some acid-resistant organisms, especially
fungi was obtained from a surface culture
of S. olivaceus, BM 99 separated from forest
soil samples in a medium containing glucose,
NaNO₃, NaCl, MgSO₄, K₂HPO₄ and yeast auto-
lysate. Concentration in the medium of Fe (in

Card 1/2

YUGOSLAVIA / Microbiology. Antibiosis and Symbiosis. F
Antibiotics.

Abs Jour : Ref Zhur - Biologiya, No 5, 1959, No. 19490

the form of $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$), necessary for obtaining I, must be 0.008-0.01%. *Bacillus subtilis* was utilized in the capacity of a test-organism. The maximal quantity of I in 1 ml of the culture's filtrate is 2000 units. The effectiveness of I in vitro was studied. --
From the author's summary

Card 2/2

Govorin, I. K.

AUTHORS: Bogatyrev, V.P. and Govorin, I.K. (Angarsk) 3-11-16/17

TITLE: The Town of Young Specialists (Gorod molodykh spetsialistov)

PERIODICAL: Vestnik Vysshey Shkoly, 1957, # 11, pp 87 - 96 (USSR)

ABSTRACT: The authors describe a new town built between the Angara and Kitoy rivers, (Siberia) in 1932, called Angarsk. This town has become an important industrial center. The resources of this area are timber, coal, ores, gold, mica and hydro-electric power, whose exploitation is steadily growing. During the first 5 years more than 3,000 young engineers and technicians arrived for construction work. Between 1954 and 1957, higher educational institutions sent 206 engineers and 135 young specialists - chemists, oil experts, power engineering specialists, machine builders, mechanics, economists - to work in industrial enterprises and to continue the development of Angarsk.

There is one photograph.

AVAILABLE: Library of Congress

Card 1/1

USSR/Farm Animals. The Swine

Q-4

Abs Jour : Ref Zhur - Biol., No 11, 1958, No 50053

Author : Govorka, Frenstishek

Inst :

Title : The Influence of Various Protein Levels in Feeds Upon the Growth of Swine During Fattening.

Orig Pub : Za sotc. s.-kh. nauku, 1957, A6, No 8, 289-300

Abstract : One experimental group of Czech white breed swine received standard protein feed. The second group was given feeds containing 13.3 more protein and the third group was fed feeds containing 24 percent more protein. In the 2nd group average daily weight gains amounted to 626 gr in 208 days, or to 123.7 percent as compared with the 1st group. In the 3rd group these gains amounted to 585 gr, or to 115.6 percent. In the 2nd group, expenditures of digestible proteins per 1 kg of weight gain was 9.7 percent lower than in the 1st group. In terms of berley, expenditures amounted to 4.15 kg per 1 kg weight gain in the 1st group, to 3.62 kg

Card : 1/1 in the 2nd group, and to 40.1 kg in the 3rd group.

GOVORKA, J. P

GOVORKA, Jan. P. [Govorka, J.P.]

Academician N.I. Skriabin and helminthology in Czechoslovakia.
Veterinariia 35 no.12:20-22 D '58. (MIRA 11:12)

1. Chlen-korrespondent Slovatskoy AN.
(Czechoslovakia--Helminthology)

GOVORKO, N.K.

Domes of emptied stopes. Ugol' 31 no.10:37 0 '56. (MLRA 9:11)

1. Glavnyy geolog tresta Vostokugol'.
(Pechora Basin--Coal mines and mining)

GLUKHOV, P.P., nauchn. sotr.; MUKHACHEV, B.I., nauchn. stor.;
TSYBYKTAROVA, D.S., nauchn. sotr.; PLEPOV, V.S., kand.
ist. nauk. glav. red.; GOVORKOV, A.A., kand. ist. nauk,
red.; TUTOLMINA, O.N., kand. ist. nauk, red.;
CHERNYSHEVA, V.I., red.; SHARAPOV, V.A., nauchn. sotr.;
red.; SIMKHO, Kh.S., red.

[The working class' effort for the reconstruction and
development of Far Eastern industry, 1922-1925; collection
of documents and materials] Bor'ba rabocheho klassa za
vosstanovlenie i razvitie promyshlennosti Dal'nevostochnoi
oblasti(1922-1925 gg.); sbornik dokumentov i materialov.
Khabarovsk, Khabarovskoe knizhnoe izd-vo, 1962. 412 p.
(MIRA 17:9)

1. Zaveduyushchaya arkhivnym otделom Khabarovskogo Krayevogo
ispolnitel'nogo komiteta (for Chernysheva). 2. Tsentral'nyy
gosudarstvennyy arkhiv RSFSR Dal'nego Vostoka (for Sharapov).

GOVORKOV, A.B.

Neutrino-induced disintegration of deuterons. Zhur.eksp.i teor.
fiz. 30 no.5:974-975 My '56. (MIRA 9:9)
(Deuterons--Decay) (Nuclear reactions)

S/089/62/013/002/004/011
B102/B104

21,1000.
AUTHOR:

Govorkov, A. B.

TITLE:

Statistical straggling of pulse amplitudes in a pulsed fast reactor

PERIODICAL:

Atomnaya energiya, v. 13, no. 2, 1962, 152-154

TEXT: L. N. Usachev (Reactor Construction and Reactor Theory. Report at the First Geneva Conference on the Peaceful Uses of Atomic Energy, 1955) presented a formula for calculating the root-mean-square fast-neutron pulse height dispersion, which is in good agreement with experiment. A similar formula is now derived which allows for the space and energy distributions of neutrons, and a comparatively simple method of averaging

is given. For $\frac{(N-\bar{N})^2}{N^2}$ an expression is obtained which is consistent with

that developed by G. Ye. Blokhin et al. (Atomnaya energiya, 10, no. 5, 437, 1961) up to a factor of 1.1-1.2.

SUBMITTED:
Card 1/1

January 11, 1962

$\lambda_{\text{eff}}(\tau)/\lambda_{\text{eff}}(c)/\lambda_{\text{eff}}(n)-2/\lambda_{\text{PR}}$ Pr-4/Po-4/Fu-4 DM

S19042/54 01 008 0471/0473

ACCESSION NR. AP5001269

AUTHOR: Govorkov, A. B.

TITLE: Statistical equation of reactor kinetics - 19

SOURCE: Atomnaya energiya, v. 17, no. 6, 1964, 474-479

TOPIC TAGS: reactor kinetics, statistical neutron behavior, prompt neutron, delayed neutron, Rossi alpha experiment, statistical equation, nuclear reactor

ABSTRACT: In addition to the usual kinetic equations for the prompt neutron flux which determine the average behavior of the neutrons in the reactor, the author gives the kinetic equations for the "densities products" of the neutron fluxes. The latter describe the statistical behavior of prompt neutrons in the reactor. A method of effective averaging of the characteristics of the statistical reactor behavior is given by taking into consideration the spacial and energetic neutron distribution. The theory of Rossi- α -experiment is discussed. The delayed neutrons produced by fission are considered in the external source (see also L. Pal and

Card 1/2

L 24215-65

ACCESSION NR: AP5001269

H. Nemet. Pile Neutron Research in Physics, Vienna, I. A. E. A. 1962 p. 491).
The author is grateful to Yu. A. Romanov and N. A. Dmitriyev for discussions.
as 25 equations
None

SUBMITTED: 13Dec63

ENCL. 00

SUB CODE: NP

NR REF SOV: 002

OTHER : 005

Card 2/2

PLEKHANOV, P.S., inzh.; KOSHKIN, V.A., inzh.; KRITININ, I.A., inzh.;
Prinimali uchastiye: BAZHENOV, M.M.; VAYNSHTEYN, I.L.; POPOV, P.A.;
ZAKHARENKO, N.I.; MANCHEVSKIY, I.V.; GRDINA, Yu.V.; GOVORKOV, A.P.;
NESTEROV, N.A.; GRIGORKIN, V.I.

Rolling of high-manganese rails. Stal' 21 no.5; 423-425 My '61.
(MIRA 14:5)

1. Kuznetskiy metallurgicheskiy kombinat (for Plekhanov, Koshkin,
Kritenin, Bazhenov, Vaynshteyn, Popov, Zakharenko, Manchevskiy).
2. Sibirskiy metallurgicheskiy institut (for Grdina, Govorkov,
Nesterov, Grigorkin).

(Railroads—Rails)

(Rolling (Metalwork))

SUBJECT USSR / PHYSICS
AUTHOR GOVORKOV, B.B., GOL'DANSKIY, V.I., KARPUCHIN, O.A., KUZENKO, A.V.
TITLE The Elastic Scattering of γ -Quanta with an Energy of up to 120 MeV by Protons.
PERIODICAL Dokl. Akad. Nauk 111, fasc. 5, 988-991 (1956)
Issued: 1 / 1957

Experiments were carried out by means of the 265 MeV-synchrotron of the Physico-Institute "P.N. LEBEDEV" of the Academy of Science in the USSR. For the purpose of reducing the photon load of individual counters work was carried out in such a manner that the duration of the impulses of the synchrotron amounted to 1000 μ sec (instead of the usual 30 μ sec). The spectrum of the electrons impinging upon the target of the synchrotron was nearly triangular with the base of 75 to 119 MeV and with the maximum at 97 MeV. The elastic γ p-scattering at these energies was investigated by registration of the scattered γ -quanta solely with the help of telescopes which consist of scintillation counters. An attached drawing illustrates this experimental order. Observation was carried out with two telescopes which were fitted simultaneously under the angles 90 and 90°, 45 and 90°, 45 and 135° (in the laboratory system). Each telescope consisted of four liquid-scintillation-counters with a solution of terphenyl in toluene. The recording threshold for the γ -quanta in the case of both telescopes amounted to ~ 40 MeV. The light pulses emitted from the scintillators were recorded by means of photoelectronic multipliers

Dokl.Akad.Nauk 111, fasc.5, 988-991 (1956)

CARD 2 / 2

PA - 1939

FEU - 19 - II. Liquid hydrogen was used in a target vessel of penopolystirol. The determination of the effectively acting volume of the target is described.

Experimental results are shown in form of a graph. The cross section for the angle 90° amounts to $d\sigma/d\Omega = (1,35 \pm 0,13) \cdot 10^{-32} \text{ cm}^2/\text{sterad}$ and agrees well with the results obtained by G.OXLEY and V.TELEGDI, Phys.Rev.100,435 (1955). However, in contrast to this work, the authors obtained a predominating scattering of photons into the rear hemisphere (for 45° - $d\sigma/d\Omega = (1,40 \pm 0,17) \cdot 10^{-32} \text{ cm}^2/\text{sterad}$; for 135° - $(2,25 \pm 0,45) \cdot 10^{-32} \text{ cm}^2/\text{sterad}$). This result has the following significance: Already at energies of γ quanta of up to 120 MeV the analysis of the COMPTON effect on protons, which is based only on the value of the anomalous statistical magnetic moment and results in a certain predominance of scattering in to the front hemisphere, is found to be insufficient. Apparently the interference of the scattering of γ -quanta on the proton as a punctiform source and on the nucleon-isobar becomes noticeable already at such energies, viz. because of the existence of an asymmetric nucleon cloud a dynamic magnetic moment of the nucleons occurs.

INSTITUTION: Physical Institute "P.N.LEBEDEV" of the Academy of Science in the USSR

AUTHOR: GOVORKOV, B.B., GOL'DANSKIY, V.I., KARPUCHIN, O.A., PA - 2172
 KUCENKO, A.V., PAVLOVSKAJA, V.V.
 TITLE: The Dependence of the Cross Section of the Photoproduction of
 Neutral Pions on the Atomic Weight of Nuclei. (Russian)
 PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol 112, Nr 1, pp 37-40 (U.S.S.R.)
 Received: 2 / 1957 Reviewed: 3 / 1957
 ABSTRACT: In order to give a precise explanation of the dependence of the
 cross sections mentioned in the heading within a wide range of atom-
 ic weights, the authors made a series of experiments and investigated
 this dependence carefully within the range of small atomic weights.
 For this purpose the yields of neutral pions from liquid hydrogen,
 liquid nitrogen and liquid oxygen (these liquid gases washed a cy-
 lindrical target of penopolystirol PS-4) were compared. The results
 found here are very accurate because of the faint background. For
 transition to heavier nuclei two graphite targets were used. The
 cross sections of the photoproduction of neutral pions found can be
 referred to hydrogen on the indicated substances (N, O, C). The experi-
 ments were carried out on the 265 MeV synchrotron of the Physical
 Institute of the Academy of Science of the USSR.
 Experimental results and statistical errors are shown in a table.
 Also taking into account of the systematical errors is discussed.
 The cross section of the photoproduction of neutral pions increases
 in the case of light nuclei, at least up to oxygen, as $\sigma_{\pi^0} \sim A$ (and
 even less). In the case of heavier nuclei a dependence $\sigma_{\pi^0} \sim A^{2/3}$

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The Dependence of the Cross Section of the Photoproduction of
 Neutral Pions on the Atomic Weight of Nuclei (Russian)
 is then obtained. Such a dependence $\sigma_{\pi^0} = f(A)$ can be explained
 qualitatively by the fact that the mesons are produced in the entire
 volume of the nucleus but are then subjected to re-absorption.
 Therefore only a part of the thus produced mesons is emitted from
 the nucleus. For a quantitative investigation of the problem of
 re-absorption of mesons, however, three hitherto neglected circum-
 stances have to be taken into account: 1) The yield of photoproduc-
 tion of neutral pions in the energy interval considered here is
 several times greater than the yield of neutral pions (? perhaps
 better described as: charged pions ?). 2) The probability of the
 scattering of mesons by nucleons is greater than the probability
 of a re-charge. 3) The cross sections of the reactions
 $\pi^- + p \rightarrow \pi^0 + n$ and $\pi^+ + n \rightarrow \pi^0 + p$ are in the case of small meson
 energies considerably greater than the cross sections of the in-
 verse process.

ASSOCIATION: Not given
 PRESENTED BY:
 SUBMITTED:
 AVAILABLE: Library of Congress

Card 2/2

SOV/89-7-4-20/28

21(7),24(5)

AUTHOR:

Govorkov, B. B.

TITLE:

The IX. International Conference on High Energy Physics

PERIODICAL:

Atomnaya energiya, 1959, Vol 7, Nr 4, pp 391 - 394 (USSR)

ABSTRACT:

From July 15 to July 25, 1959, the IX. International Conference on the Physics of High Energies was held at Kiyev. The Conference was attended by more than 300 prominent scientists of 32 countries and also of the most important international organizations as e.g.: the Ob'yedinennyi institut yadernykh issledovaniy (Joint Institute of Nuclear Research) and the European Center of Nuclear Research. The Conference was attended by the following Soviet professors: A. I. Alikhanov, D. I. Blokhintsev, N. N. Bogolyubov, V. I. Veksler, L. D. Landau, B. M. Pontekorvo, and I. Ye. Tamm. The Conference accepted the system of surveying lectures. The first plenary meeting on July 20 was opened by Professor D. I. Blokhintsev, chairman of the organizing committee. Although the physicists concentrated their interest upon the range of high energies, several problems in the range near the threshold of the photoproduction of mesons remain to be solved or to be precisely defined: The measurement of the

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The IX. International Conference on High Energy Physics SOV/89-7-4-20/28

cross sections of pion photoproduction at the threshold, the interaction constants, and the applicability of theoretical descriptions of threshold effects. In this energy range the most complete experimental results were obtained by Soviet physicists on the synchrotron of the Fizicheskii institut AN SSSR (Physics Institute of the AS USSR). Professor B. M. Pontekorvo spoke about nucleon - nucleon scattering and the individual production of pions in $\pi\pi$ and πp interactions. It was not a single case of an infringement of the principle of charge-independence was found in the processes developing under participation of pions and nucleons. Knowledge of the phase shifts in π^-p -scattering increased considerably. The energy dependence of the total cross section of π^-p -scattering must have two maxima. The Conference also dealt with numerous new "negative discoveries"; thus, the hypothesis of the existence of an isotopic scalar π^0 -meson (with a mass approximately like that of the usual π^0 -meson) was rejected. Much interest was aroused also by the data concerning the production of pion pairs in meson-nucleon collisions, which were found in the USSR (Joint Insti-

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The IX. International Conference on High Energy Physics SOV/89-7-4-20/28

tute of Nuclear Research), in Italy, and in Berkeley. These data offer possibilities of investigating pion - pion interaction. B. M. Pontecorvo also spoke about a new gas-containing Cherenkov counter and about hodoscopic systems with pulse-like feeding. Professor E. Segré and Academician V. I. Veksler gave a report on the results obtained by means of the synchrotrons in Dubna (near Moscow) and at Berkeley. Segré congratulated the physicists of the OIYaI, who produced an antiproton beam with a momentum of 2.8 BeV/c, and began investigations in this field. The Chinese scientist Wang Kang-ch'ang (OIYaI) in the course of the discussion spoke about Segré's lecture and showed two interesting pictures of the production of antiprotons. V. I. Veksler spoke about the systematical analysis of nucleon-nucleon and also pion - nucleon interactions at energies of from 1.5-2 to 10 BeV. Very accurate measurements of p-p scattering at 8.5 BeV (Dubna) and 3 BeV (Berkeley) prove the existence of the so-called potential scattering. Accordingly, the amplitude at very high energies is no purely imaginary quantity. In these experiments photographic plates, which were arranged so as to be vertical to the accelerator beam, were used. The analysis of inelastic

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π - π - and π -n-interactions for 2.6 and 9 Bev respectively in Berkeley and in Dubna show the non-agreement of results with the predictions made with respect to peripheral collisions. According to I. Ye. Tamm such collisions are connected with the concept of the one-meson exchange. Tamm's idea furnishes entirely unique relations between the probabilities of the various isotopic channels of the reactions. The experimental results obtained at the OIYaI concerning peripheral collisions agree well with the predictions made by Tamm. The totality of experimental data at present available on π -p-interactions is in contradiction to the predictions of the statistical theory at low (~ 1.5 Bev) and also at high energies. In the case of the only model that does not contradict the totality of all facts concerning π -p-interactions at these energies the high-energy pion, in interaction with a proton, produces a δ -meson, which is then knocked out from the meson shell of the nucleon. The mechanism of this scattering at high energies (> 2 Bev) differs essentially from that of elastic p-p-scattering. Here the actual impact parameter in a wide interval does not depend on energy. According to Veksler this quantity ought to be interrelated with

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the meson theory. Professor G. F. ~~GOLE~~ (USA) and Professor Ya. A. Smorodinskiy (USSR) spoke about the problems of strong interactions of the usual particles. Smorodinskiy furnished a phenomenological analysis of experiments concerning the scattering of nucleons by nucleons (N-N) carried out on the synchrocyclotrons in Berkeley, Rochester, Cambridge (USA), Dubna (USSR), Liverpool and Harwell (Great Britain). The totality of data available on N-N-scattering cannot be described by a potential depending only on the coordinates and spins, and therefore the potential must depend also on the spin-orbit-coupling. Therefore, the results obtained by the Soviet theoreticians A. F. Grashin and I. Yu. Kobzarev (who calculated spin-orbit interaction potential from the approximated dispersion relations) aroused much interest. Their lecture dealt with a new method of tackling the problem of the strong interaction of ordinary particles. This process is based on Mandel'shtam's double dispersion conceptions. The discussion of the lecture delivered by Ch'u essentially concerned the problems of the possible measurement of π - π -interaction. Professor D. I. Blokhintsev, V. N. Gribov (USSR) and others participated in this discussion. The

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problems connected with the production and interaction of strange particles were dealt with at the plenary meeting under the chairmanship of Professor Wang Kang-chang. In the course of the discussions following lectures on the strange particles, T'ing Ta-ts'ao published the results obtained by a group of scientific collaborators of the OIYaI concerning the production of strange particles in the interaction of negative 8.6 Bev-pions with protons. T'ing Ta-ts'ao in the course of one of these discussions showed a picture, according to which a new particle was apparently concerned, which decays into a positive pion and a K^0 -meson. The plenary session dealing with dispersion relations was attended by D. V. Shirkov (OIYaI) and Professor Lehmann. D. V. Shirkov investigated the theoretical aspects of investigations of dispersion relations of the usual type. A discussion developed between Lehmann and Academician L. D. Landau. A meeting held under the chairmanship of Academician I. Ye. Tamm dealt with the new theoretical ideas in the field of the physics of elementary particles. L. D. Landau, M. A. Markov (USSR) and others took part in this discussion. A. I. Alikhanov spoke about decays of μ -meson- and π -meson nuclei. An experi-

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ment made by a group of the OIYaI (A. Ye. Ignatenko et al) made the direct calculation of myon spin possible. The results concerning cosmic radiation were dealt with mainly at the International Conference on Cosmic Radiation. The theoretical problems of the multiple production of mesons at extremely high energies were dealt with by Ye. L. Feynberg (USSR). I. Ye. Tamm was the last to speak at this conference. During the work of the conference several seminars were established for such persons as work in any way in the field of **high energy physics**: Theoretical Seminary, Seminary for the Methods of Working With Chambers, Seminary for Work With Electron-Accelerators. The material of this conference will be published by the Izdatel'stvo AN SSSR (Publishing House of the AS, USSR) in form of a special collection. There is 1 figure.

Card 7/7

21(7)

AUTHORS:

Belousov, A. S., Govorkov, B. B.,
Gol'danskiy, V. I.

SOV/56-36-1-33/62

TITLE:

A Generalized Form of the Dependence of the Cross Section
of the π^- -Meson Production on Complex Nuclei Upon the
Number of Nucleons (Obobshchennyy vid zavisimosti secheniy
fotorozhdeniya π^- -mezonov na slozhnykh yadrakh ot chisla
nuklonov)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959,
Vol 36, Nr 1, pp 244-248 (USSR)

ABSTRACT:

In the present report the attempt is made to take into account
the influence exercised by the simultaneous absorption of
mesons by two nucleons at the moment of their production
upon the dependence upon A of the cross section σ_π of neutral
pion production in as simple a manner as possible. First, this
dependence is investigated for a concrete wave function and for
the case of uniform thickness of the nucleons in the nucleus.
It is assumed to be necessary and sufficient for the
reabsorption of a meson at the instant of its creation by
a two-nucleon group that the nucleon pair be in a distance of
 $r \ll 1 = \hbar/\mu c$. For the nucleon pairs the wave function of

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A Generalized Form of the Dependence of the Cross
Section of the π -Nucleon Photocreation
Nuclei Upon the Number of Nucleons

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Chu and Gol'dberger is used: $\psi(p) = \sqrt{\alpha \hbar} / \pi(\alpha^2 \hbar^2 + p^2)$, where $\hbar^2 \alpha^2 / 2m = 18$ Mev holds. Here m denotes the mass of the nucleon. A diagram shows the dependence of the influence of "nion creation" occurring on the surface (i. e. a pion creation in the surface layer having the thickness l) upon the mass number A of the nucleus. In addition to the absorption of mesons at the instant of their production, also the influence exercised by the following reabsorption in the nucleus must be taken into account. The third chapter of this paper deals with the dependence of a cross section σ_{π} on A for Fermi's distribution of nucleon density in the nucleus. Consideration of the various forms of nucleon density distribution in the nucleus would complicate all calculations considerably. The authors therefore endeavored to take the distribution of nucleon density into account in a purely phenomenological manner without any presuppositions as to the concrete form of the two-nucleon wave function. By assuming a certain character of nucleon density distribution in the nucleus and a certain

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A Generalized Form of the Dependence of the Cross Section of the π -Meson Photocreation on Complex Nuclei Upon the Number of Nucleons SOV/56-36-1-33/62

probability of the absorption of the meson at the instant of its production by this density, it is possible to determine the dependence of the cross section σ_{π^0} on A . This dependence contains the parameter f_0 , i. e. the probability of the production of a meson in the center of the nucleus without two-nucleon absorption. Next, an expression is derived for the probability of the photoproduction of a meson, averaged over the entire nucleus. Also in the formula it is necessary to introduce factors by which the usual meson reabsorption is taken into account. The values of f_0 corresponding to the experiment and the form of the dependence $\sigma_{\pi^0} = f(A)$ agree with the values obtained in the second part of this paper. In conclusion, an expression is given for the production of fast proton pairs due to the reabsorption of positive pions. The authors thank Ye. M. Leykin for discussing their work. There are 3 figures and 9 references, 3 of which are Soviet.

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A Generalized Form of the Dependence of the Cross
Section of the π^- -Meson Photocreation on Complex
Nuclei Upon the Number of Nucleons

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ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR
(Physics Institute imeni P. N. Lebedev of the Academy of
Sciences, USSR)

SUBMITTED: July 10, 1958

Card 4/4

21(7)
AUTHORS:

Vasil'kov, R. G., Govorkov, B. B.,
Gol'danskiy, V. I.

SOV/56-37-1-2/64

TITLE:

The Photoproduction of Neutral π -Mesons on Hydrogen at Energies
of γ -Quanta From Threshold to 240 Mev (Potorozhdeniye neytral'-
nykh π -mezonov na vodorode pri energiyakh γ -kvantov ot poroga
do 240 MeV)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959,
Vol 37, Nr 1, pp 11-22 (USSR)

ABSTRACT:

The authors describe investigations of the angular distribu-
tion and the energy dependence of the reaction (1):
 $\gamma + p \rightarrow \pi^0 + p$ for E_γ between the threshold of the photo-
production (145 Mev) of the neutral pions and 240 Mev; the
angular distribution at energies near threshold (asymmetric
because of interference between S- and P-wave) is described
by the formula $d\sigma/dQ = A + B\cos\theta + C\cos^2\theta$; the coefficients
A, B, and C correspond to the contributions of the E1-, M1-,
and E2-absorption of γ -quanta. The energy dependence of A, B,
and C near the threshold of pion-photoproduction is investiga-
ted. Experiments were carried out on the synchrotron of the

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The Photoproduction of Neutral π -Mesons on Hydrogen at Energies of γ -Quanta From Threshold to 240 Mev SOV/56-37-1-2/64

FIAN (265 Mev); Figure 1 gives a schematical representation of the experimental arrangement. The first of the five discussed possibilities of observing pion-photoproduction (i.e. recording of the single γ -quanta of π^0 -decay) is selected. Recording is carried out by means of two telescopes (90 and 135° or 45 and 90°) consisting of 4 scintillation counters. Measurements were carried out for seven values of the maximum energy of bremsstrahlung in the channels: 130, 150, 170, 190, 210, 230, and 250 Mev. The examination results are shown by diagrams and tables. Figure 2 shows the energy dependence of the γ -quanta originating from π^0 -decay for the angles 45, 90, and 135° in the laboratory system (exponential increase of the γ -yield with increasing energy); figure 3 shows the dependence of the coefficients a, b, c, of formula (3) $N(\theta_\gamma) = a(\theta_\gamma)A + b(\theta_\gamma)B + c(\theta_\gamma)C$ upon E_γ , and in table 1 the values of A, B, C, and σ_{tot} are given for $E_\gamma = 160, 180, 200, 220, \text{ and } 240$ Mev. Thus the following was measured for 240 Mev: $A = 8.4 \pm 0.2$, $B = 0.9 \pm 0.2$, $C = 6.0 \pm 0.6$ ($10^{-30} \text{ cm}^2/\text{steradian}$) and $\sigma_{tot} = (8.1 \pm 0.3) \cdot 10^{-29} \text{ cm}^2$.

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The Photoproduction of Neutral π -Mesons on Hydrogen
at Energies of γ -Quanta From Threshold to 240 Mev

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Figure 4 shows A, B, and C as functions of E_γ . For higher energies (of up to 450 Mev) the data were obtained from the papers of references 3 and 4. A has a maximum at about 320 Mev, C is entirely in the negative and has a minimum at the same place; B, at about 260 Mev, goes over from the negative to the positive. Figure 5 shows the energy dependence of the total cross sections of the π^0 -mesons on protons (part of the data was obtained from references 2 and 4); the curve has a maximum at about 325 Mev; figure 6 shows the shape of the angular distribution of pions for E_γ between 160 and 450 Mev. In conclusion, the results obtained are discussed (comparison of the data relating to π^+ - and π^0 -photoproduction near threshold, phenomenological analysis - table 2 -, ratio B/A - figure 7, ratio C/A - figure 8; comparison of the results with those obtained by other authors); in an appendix the authors describe a kinematic treatment of the method of recording (1) according to the results obtained by investigating the individual decay proton. The authors finally thank V. V. Pavlovskaya, O. A. Karpukhin, A. V. Kutsenko, and I. A. Yerofeyev for

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The Photoproduction of Neutral π -Mesons on Hydrogen at Energies of γ -Quanta From Threshold to 240 Mev SOV/56-37-1-2/64

their assistance in carrying out experiments as well as for their advice and discussions. There are 9 figures, 2 tables, and 22 references, 4 of which are Soviet.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute imeni P. N. Lebedev of the Academy of Sciences, USSR)

SUBMITTED: January 23, 1959

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21 (7)
AUTHORS:

Vasil'kov, R. G., Govorkov, B. R.

SOV/56-37-1-57/64

TITLE:

Total Photoproduction Cross Section of π^0 -Mesons on Protons at Low Energies (Polnoye sечeniye fotorozhdeniya π^0 -mezonov na protonakh pri nizkikh energiyakh)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 37, Nr 1, pp 317 - 318 (USSR)

ABSTRACT:

In continuation of two earlier papers, the total photoproduction cross section of neutral pions of the threshold energy of primary γ -quanta up to 245 Mev were measured; the experiments took place at the synchrotron (265 Mev) of the FIAN USSR; liquid hydrogen served as a target. The method was described by reference 1. The authors used a telescope, which is arranged at an angle of 90° to the primary photon beam; it simultaneously measured the yield curve of the decay quanta of the threshold energy up to 250 Mev (above 10 Mev). The widening of the maximum energy of the spectrum of bremsstrahlung was ± 1 Mev; measurement of the yield curve was carried out with a statistical error of 2-3%, the background is given as 8-10%. The dependence of the production cross section of the decay quanta on photon energy and on the yield curve was measured by means of the meth-

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Total Photoproduction Cross Section of π^0 -Mesons on Protons at Low Energies SOV/56-37-1-57/64

od of the "difference of photons" (Ref 3). The experimental σ_t -values obtained by the authors are compared with those obtained theoretically by Chew et al. (Ref 4) (drawn-out curve); agreement is very good. The slight deviations within threshold range (up to 180 Mev) are indicative of a contribution made by E1-transitions to σ_t . The course taken by the curve $\sigma_t(h\nu)$ obtained by the authors also agrees well with that obtained in reference 3, with the exception that the latter is lower by about 30%. The authors finally thank I. A. Yerofeyev for his assistance in carrying out measurements and dealing with experimental data, and they also thank V. I. Gol'danskiy and A. M. Baldin for their valuable advice. There are 1 figure and 5 references, 2 of which are Soviet.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute imeni P. N. Lebedev of the Academy of Sciences, USSR)

SUBMITTED: April 17, 1959
Card 2/2

SOV/20-127-5-16/58

24(1)
AUTHORS:

Baldin, A. M., Govorkov, B. B.

TITLE:

Checking of the Dispersion Relations for the Photoproduction of π -Mesons

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 127, Nr 5, pp 993-996 (USSR)

ABSTRACT:

The authors speak about an incongruence of experimental data, which they found in connection with the photoproduction of π_0 -mesons from $\gamma + p \rightarrow p + \pi_0$ (1) and mention the conclusions they drew on the basis of the dispersion relations for the process. They confine themselves to the energy range $q \lesssim 1$ (q - momentum of the meson, $\hbar = c = 1$), in which the long-wave approximation is well applicable. On the assumption that the s- and the p-wave play the main part in this process, the angular distribution is written down for (1):

$\frac{d\sigma}{d\Omega} = A + B \cos \theta + C \cos^2 \theta$ (2). The parameter A contains the amplitude squares of the s- and p-wave, B their interference, C the amplitude squares of the p-wave. Figure 1 gives the experimental data (Ref 1) for (1). From the graphical represen-

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SOV/20-127-5-16/58

Checking of the Dispersion Relations for the Photoproduction of π -Mesons

tation the effective values for $A^{(0)}$, $A^{(2)}$, $B^{(1)}$, and $C^{(2)}$ are calculated. For the s-photoproduction of π^0 -mesons on the neutron near threshold the following is found: $\sqrt{A^{(0)}} = (0.04 \pm 0.04) \cdot 10^{-2}$, which is smaller by one order of magnitude than the amplitude for the photoproduction of π^0 -mesons on hydrogen. On the assumption that no quadrupole absorption occurs, the amplitudes M_{1-} and M_{1+} of the magnetic transitions are calculated. The experimental data of the reaction (1) are described with sufficient accuracy if it is assumed that among the amplitudes of the p-wave different from zero there are such as describe magnetic transition by the state of a total moment $3/2$. In the following, the paper by G. Chew, M. Goldberger, F. Low, Y. Nambu (Ref 2) is criticized. The dispersion relations deduced by the authors mentioned are based on the assumption of a rapid decrease of all amplitudes of the photoproduction at $W \rightarrow \infty$, as well as of certain assumptions for this calculation. The numerical values resulting therefrom deviate considerably from experimental data. The authors state that the main cause of these deviations is the assumption of the rapid decrease of the amplitudes at $W \rightarrow \infty$. There are 1 figure and 4 references,

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SOV/20-127-5-16/58
Checking of the Dispersion Relations for the Photoproduction of π -Mesons

1 of which is Soviet.

PRESENTED: May 15, 1959 by I. Ye. Tamm, Academician

SUBMITTED: April 24, 1959

Card 3/3

VASIL'KOV, R.G.; GOVORKOV, B.B.; GOL'DANSKIY, V.I.

Photogenesis of π^0 -mesons on carbon near the threshold. Zhur.
eksp.1 terof.fiz. 37 no.4:1149-1151 0 '59.
(MIRA 13:5)

1. Fizicheskiy institut im. P.M. Lebedeva Akademii nauk SSSR.
(Mesons) (Carbon)

GOVORKOV, B. B., Cand Phys-Math Sci -- (diss) "Photo-origination of neutral
pi-mesons in hydrogen near a threshold," Dubna, 1960, 9 pp, 160 cop (Physics
Institute in P. N. Lebedev, AS USSR) (Kl, 45-60, 122)

82874

S/120/60/000/02/005/052
E032/E414

21,2300

AUTHORS: Vasil'kov, R.G., Govorkov, B.B. and Kutsenko, A.V.

TITLE: A Method for Studying the Energy Dependence of
Photonuclear Reaction Cross-Sections on a Synchrotron 19

PERIODICAL: Pribery i tekhnika eksperimenta, 1960, Nr 2,
pp 23-26 (USSR)

ABSTRACT: In synchrotron experiments in which various counters or pulse ionization chambers are employed, it is necessary, in order to prevent over-loading, that the accelerator should work under the so-called "stretched" conditions under which the radiation pulse is lengthened ("stretched") to a few microseconds. Under these conditions, the gamma-ray spectrum differs appreciably from the Schiff spectrum and turns out to be altogether indeterminate, since the intensity distribution depends on the degree of "stretching". This leads to serious difficulties in studies of the energy dependence of photonuclear reaction cross-sections. The problem can be tackled in two ways. The first of these is based on varying the instant of time at which the accelerating voltage is cut off, and is subject to all the difficulties mentioned above. The

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EO32/E414

A Method for Studying the Energy Dependence of Photonuclear
Reaction Cross-Sections on a Synchrotron

second approach is based on the use of "stretching" during that part of the acceleration cycle when the magnetic field is almost constant. It is then necessary to vary the magnitude of the maximum magnetic field. The common disadvantage of these methods is that they involve an alteration in the accelerator working conditions during the actual measurements. Moreover, the energy dependence of the cross-sections is deduced from a large number of different experiments carried out under different conditions, and this complicates the interpretation of the results and reduces their accuracy. The method described in the present paper can be used to obtain in a single experiment with "stretched" radiation pulses, the dependence of the integral reaction yield on the maximum energy of the gamma-rays from a synchrotron. It is well-known that the maximum energy of synchrotron radiation is determined by the quantity H_0 , where H is the magnetic field in the gap of the magnet at the instant when the accelerated electrons strike the target, ✓

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A Method for Studying the Energy Dependence of Photonuclear
Reaction Cross-Sections on a Synchrotron

and ρ is the radial position of the target. If the electrons are made to strike the target at low magnetic field, and this is continued until the field reaches its maximum value, one can obtain a "stretched" radiation pulse whose energy increases throughout the process. The radiation pulse obtained in this way can be used to study the energy dependence of photonuclear reaction cross-sections. Pulses from the output of the circuit recording a given reaction must then be sorted out by a suitable kicksorter into groups corresponding to different energies. Each of the channels of the pulse height analyser should open when the field reaches the value corresponding to the energy recorded by the given channel. The method can be used provided the intensity distribution in the radiation pulse is strictly uniform. In practice, this condition is not satisfied and the form of the pulse varies during the experiment. In order to exclude these changes it is necessary to have an intensity monitor whose output can be continuously

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A Method for Studying the Energy Dependence of Photonuclear
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compared with the counter output with the aid of the commutator. In this way one can determine the output of each channel per unit incident intensity, and the ratio is then independent of the magnitude of the incident intensity or the form of the pulse. Thus, the method is based on the unambiguous relation between the energy of the gamma-rays and the magnetic field in the gap of the synchrotron magnet, and the continuous comparison of the kicksorter and monitor pulses as a function of the magnetic field. The simplest way in which this method can be realized in practice involves the use of time analysers. However, this has two important disadvantages. Firstly, usual time analysers have a uniform time scale and this means that the channels cannot be distributed uniformly along the energy scale, and the energy equivalence is lost since the field in the gap of the synchrotron magnet varies sinusoidally. Secondly, the use of a time scale instead of a magnetic field scale pre-supposes an

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unambiguous relation between them. However, this relation can be upset by instabilities in the working conditions of the accelerator. These and similar disadvantages were excluded in the present work by using a magnetic field scale, i.e. with the aid of commutating elements controlled by pulses which are directly related to given values of the magnetic field in the gap of the accelerator magnet. In the set-up described in the present paper, the disadvantages of the time analysers were, in fact, only partially removed. The particular apparatus employed makes use of a combination of a time scale and a magnetic field scale, namely, the commutating devices are controlled by pulses from the timing circuit, while the position of these pulses is made to depend on the field. A block diagram of the circuit is shown in Fig 1. The apparatus consists of a gamma-ray telescope, a differential monitor and a 10-channel time analyser. The time analyser incorporates a time scale pulse generator, which produces pulses at a variable distance

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EO32/E414

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Reaction Cross-Sections on a Synchrotron

from each other, two synchronized electronic commutators and two 10-channel recording devices. The channels are distributed along the energy scale by a special coupling circuit which produces a pulse when the field in the gap of the accelerator magnet passes through a pre-determined value. The apparatus can be used to obtain energy calibrations to an accuracy of $\pm 2\%$, the main error being in the measurement of the field. The method requires the monitoring of the intensity in the expanded gamma-ray pulse and this was carried out with the aid of a scintillation counter incorporating a stilbene crystal. The method was checked by measurements on the gamma-ray yield due to the disintegration of π^0 -mesons from hydrogen and carbon targets, at 90° to the primary photon beam. The results obtained are in good agreement with those reported by Koester and Mills (Ref 5). Fig 5 shows the dependence of the gamma-ray yield at 90° for hydrogen on the maximum energy in the gamma-ray spectrum. The points

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represent the results of present measurements, and the
crosses the results taken from Ref 5. There are
5 figures and 5 references, 4 of which are Soviet and
1 English.

ASSOCIATION: Fizicheskiy institut AN SSSR
(Physics Institute AS USSR)

SUBMITTED: February 20, 1959

Card 7/7

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41435
S/120/62/000/005/008/036
E039/E420

AUTHORS: Agafonov, V.P., Govorkov, B.B., Denisov, S.P.,
Minarik, Ye.V.

TITLE: Determination of the efficiency of recording
gamma-quanta by means of monochromatization of a
beam of bremsstrahlung

PERIODICAL: Pribery i tekhnika eksperimenta, no.5, 1962, 47-50

TEXT: Description is given of a new method of investigating the
energy dependence of counter efficiency. In the path of a
collimated beam of bremsstrahlung (diameter 3 cm) is placed a
lead target which becomes an intense source of electron
positron pairs, emitted primarily in the same direction as the
incident γ quanta. Electrons of a definite energy E_0 , selected
from the beam by means of a magnetic field, collide with a second
lead target and produce γ quanta of energy E_γ (the target is
sufficiently thin to avoid the probability of double radiation and
for multiple scattering to be negligibly small). These γ quanta
of energy E_γ are allowed to enter the telescope detector T_γ
which is under investigation. Measurements were carried
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Determination of the efficiency ...

S/120/62/000/005/008/036
E039/E420

out on a beam of bremsstrahlung from the Physics Institute's synchrotron at 265 MeV. It is shown that the efficiency of a γ telescope rises steadily from a few % at 20 MeV to $\sim 40\%$ at ~ 150 MeV. Measurements of efficiency at two values of E_γ were made for other γ telescopes of similar construction and the results agreed within the statistical error. The variation of efficiency with thickness of the lead converter was also measured for $E_\gamma = 60.8$ MeV. A flat maximum at $\sim 20\%$ is obtained for a thickness of 8 mm. There are 4 figures.

ASSOCIATION: Fizicheskiy institut AN SSSR
(Physics Institute AS USSR)

SUBMITTED: December 25, 1961

Card 2/2

S/056/62/042/004/013/037
B163/102

AUTHORS: Govorkov, B. B., Denisov, S. P., Minarik, Ye. V.

TITLE: Elastic photoproduction of π^0 mesons on carbon at 155 Mev

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42
no. 4, 1962, 1010-1012

TEXT: γ rays with an average energy of 155 Mev from the FIAN synchrotron were used to produce π^0 mesons in the reaction $\gamma + C^{12} \rightarrow C^{12} + \pi^0$. The angular distribution of the π^0 mesons was determined by coincidence measurements of the two decay γ quanta with two γ ray telescopes, each consisting of two conventional fluid scintillation counters with a 5 mm lead converter in front. The telescopes were arranged in a plane whose inclination against the primary γ beam determined the average angle of emission of the π^0 mesons recorded. The experimental differential cross section for the elastic photoproduction of π^0 mesons is in good agreement with

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S/056/62/042/004/013/037
B163/B102

Elastic photoproduction of...

theoretical values calculated in the impulse approximation under the assumption that protons and neutrons contribute equally to the coherent photoproduction, and that the distribution of nuclear matter in the C^{12} nucleus equals the charge distribution known from electron scattering experiments.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR
(Physics Institute imeni P. N. Lebedev of the Academy of
Sciences USSR)

SUBMITTED: November 23, 1961

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L 17620-63

EW(m)/BDS

AFFTC/ASD

S/056/63/044/003/018/053

54
53

AUTHOR: Govorkov, B. B., Denisov, S. P., and Minarik, Ye. V.

TITLE: Near threshold photoproduction of neutral mesons¹⁹ of nuclei

PERIODICAL: Zhurnal eksperimental'noy i tekhnicheskoy fiziki, v. 44, no. 3, 1963, 878-886

TEXT: Earlier experiments by researchers of both the East and West showed that the photoproduction of mesons by quanta of energy up to 200 Mev is basically due to elastic coherent production. The present paper presents the measurement of the angular dependence of the π^0 -meson photoproduction cross section on Be, Al, Cu, Cd, and Ta nuclei for 154 Mev mean primary photon energies. The π^0 -mesons were observed by recording coincidences of $\pi^0 \rightarrow \gamma + \gamma$ decay γ -quanta with the aid of two scintillation telescopes. An analysis of the results obtained shows that the main contribution to the cross section is from elastic coherent photoproduction. A more detailed analysis of experimental results will be published at a later date. A. M. Baldin and A. I. Lebedev evaluated the theoretical implications of the experimental results. There are 8 figures.

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S/056/63/044/003/018/053 /

Near threshold photoproduction...

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics
Institute im. P. N. Lebedev of the Academy of Sciences USSR)

SUBMITTED: October 25, 1962

Card 2/2

L 10236-63

BDS/EFT(m)—AFTTC/ASD—IJP(G)

ACCESSION NR: AP3000035

S/0056/63/044/005/1463/1469

AUTHOR: Govorkov, B. B.; Denisov, S. P.; Lebedev, A. I.; Minarik, Ye. V.

TITLE: High partial waves in the photoproduction¹ of neutral pions on protons

SOURCE: Zhurnal eksper. i teoret. fiziki, v. 44, no. 5, 1963, 1463-1469

TOPIC TAGS: Neutral pion photoproduction, threshold reactions, partial waves

ABSTRACT: The angular distribution of neutral pions produced on protons by photons of 181 MeV energy was measured with an aim at comparing directly the experimental results with the exact dispersion-relation calculations, which hitherto has met with some difficulties. An increase in the experimental accuracy and a determination of experimental quantities that can be calculated without the need for taking the dispersion integrals into account can help account for the remaining disparity. The authors describe an accurate measurement of the angular distributions of the neutral-pion photoproduction on protons near threshold, and give an analysis of the results from the point of view of reconciliation of experiment with dispersion-relation calculations. The

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ACCESSION NR: AP3000035

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neutral pions were registered by simultaneously counting the two decay photons by scintillation-counter telescopes. The net results were more accurate angular distributions for neutral-pion photoproduction near threshold, better agreement with the one-dimensional dispersion-relation calculation, and detection of some disparity between the experimental data and the dispersion-relation calculations if no account is taken of the resonant meson states. This may indicate that the resonance meson states make some contribution to the investigated process. "The authors thank P. A. Cherenkov for interest in this work, A. M. Baldin for valuable advice, A. V. Kutsenko for help in the work with the computer, I. A. Yegorov for numerical estimates, A. G. Gerasimova for help in carrying out the experiments, and the whole synchrotron crew of the Physics Institute of the Academy of Sciences." There are five figures and three tables.

ASSOCIATION: Fizicheskii institut im. P. N. Lebedeva, Akademii nauk SSSR
(Physics Institute, Academy of Sciences)

SUBMITTED: 28Nov63

DATE ACQ: 12Jun63

ENCL: 00

SUB CODE: PH

NR REF SOV: 007

OTHER: 008

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5/1/64
2/2/64

L 13620-63 EWT(m)/BDS AFPTC/ASD

ACCESSION NR: AP3003098

S/0056/63/044/006/1780/1786

59
52

AUTHOR: Govorkov, B. B.; Denisov, S. P.; Minarik, Ye. V.

TITLE: Determination of nuclear dimensions¹⁹ from differential cross sections for neutral pion photoproduction

SOURCE: Zhurnal eksper. i teor. fiziki, v. 44, no. 6, 1963, 1780-1786

TOPIC TAGS: nuclear dimension, neutral pion photoproduction, angular distribution, cross section, amplitude

ABSTRACT: The results of neutral pion photoproduction are presented for a mean primary photon energy of 182 MeV. These data, along with the angular distributions of neutral pions obtained in earlier experiments for 154 MeV energy, are analyzed in order to obtain some parameters of the nucleon distribution in Be, C, Al, Cu, Cd, Ta, and Pb nuclei. The experimental apparatus and the setup of the experiments will be described elsewhere (ZhETF, in press). The results agree satisfactorily with the uniform model in the case of Cu, Cd, and Ta, which in the case of these metals coincide with the results of the trapezoidal model. The values obtained for the amplitudes can also be reconciled with the calcula-

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ACCESSION NR: AP3003098

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tions. "In conclusion the authors thank P. A. Cherenkov and A. M. Baldin for interest in their work, S. N. Sokolov and L. N. Shtarkov for helpful consultations on the analysis of the experimental data by the least-squares method, and also the cyclotron crew of the Physics Institute. We would also like to thank A. V. Kutsenko, P. N. Komolov, and the staff of the computing department of the Physics Institute for help with the calculations on the electronic computers." Orig. art. has: 11 figures, 5 formulas, and 2 tables.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR
(Physics Institute, Academy of Sciences, SSSR)

SUBMITTED: 25Feb63date acq/ 23Jul63

ENCL: 00

SUB CODE: 00

NO REF SOV: 003

OTHER: 006

Card 2/2

GOVORKOV, B.B.; LEBEDEV, A.I.

Conference on Interactions between High-energy Photons. Atom. energ.
15 no.5:436-438 N '63. (MIRA 16:12)

13721-65 ENT(m)/T/EWA(π)-2 ESD(t)
ACCESSION NR: AP4047884

S/0056/64/047/004/1199/1201

AUTHORS: Govorkov, B. B.; Denisov, S. P.; Lebedev, A. I.; Minarik, Y. V.; Kharlamov, S. P.

TITLE: Photoproduction of neutral pions by protons at 210 MeV

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47, no. 4, 1964, 1199-1201

TOPIC TAGS: photoproduction, neutral pion, gamma proton interaction, dispersion relation, photoproduction cross section

ABSTRACT: In view of its significance to a complete phase shift and the information it can yield on the applicability of theory, the process $\gamma + p \rightarrow \pi^0 + p$ was investigated and the total cross section was measured as a function of angles at photon energy 210 ± 14 MeV in the laboratory system. Measurements were carried out in the bremsstrahlung beam of the

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ACCESSION NR: AP4047884

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FIAN 265-MeV synchrotron. The neutral pions were observed by counting the two decay γ quanta in coincidence. The apparatus used was described by the authors previously (ZhETF v. 44, 1463, 1963), where a liquid hydrogen target was used in an ordinary glass Dewar with wall thickness 1 mm. The hydrogen capacity of the Dewar was 100 g, so that continuous measurements could be made for 12 hours. The differential cross sections for the reaction $\pi^0 \rightarrow \gamma + \gamma$ of mesons from protons were calculated from the measured yield by the method described by Govorkov et al. (ZhETF v. 44, 878, 1963). Comparison of the results with those by others showed good agreement. Comparing the data with the cross sections calculated on the basis of the dispersion relation it is concluded that the data presented can be described within the framework of the dipion model without introduction of a subtraction constant in the $\gamma + \pi \rightarrow \pi + \pi \rightarrow \gamma + \pi$ channel. "The authors are grateful to A. M. Baldin for helpful discussions and R. S. Uvarov for assistance with the numerical calculations." Orig. art. has: 1 figure.

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L 13921-65
ACCESSION NR: AP4047884

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk
SSSR (Physics Institute, Academy of Sciences SSSR)

SUBMITTED: 15Apr64

ENCL: 00

SUB CODE: NP

NR REF SOV: 009

OTHER: 005

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